

202206UECM3463OE3b

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Started on	Sunday, 14 August 2022, 04:56 PM
Completed on	Sunday, 14 August 2022, 04:56 PM
Time taken	6 secs
Grade	0 out of a maximum of 10 (0%)

1

Marks: 1

For a certain insurance, individual losses in 2020 were Pareto distributed with parameters $\alpha = 3$ and $\theta = 1400$. A deductible of 140.0 is applied to each loss. In 2021, individual losses have increased 5%. A deductible of 140.0 is still applied to each loss. Determine the standard deviation of amount paid per loss. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 162503.99

Marks for this submission: 0/1.

2

Marks: 1

Let the frequency distribution be negative binomial with $r = 3$ and $\beta = 4$. Let the severity distribution has the exponential distribution with mean 40. Determine $E(S \wedge 400)$. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 311.1

Marks for this submission: 0/1.

3

Marks: 1

You are given:

- Claim counts per year follow a negative binomial distribution with $r = 2$, $\beta = 4.00$.
- Claim sizes follow a Pareto distribution with $\alpha = 6$, $\theta = 10290$.
- Claim counts and claim sizes are independent.

A stop-loss reinsurance contract reinsures 100% of the losses above an aggregate limit u . Using the normal approximation, determine the u for which the probability that aggregate claims are greater than u is 5%. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 40876.538687

Marks for this submission: 0/1.

4

Marks: 1

Let the frequency distribution be negative binomial with $r = 4$ and $\beta = 3$. Let the severity distribution has the exponential distribution with mean 27. Determine $F_S(34)$. _____

Answer:

[Make comment or override grade](#)

Incorrect
Correct answer: 0.0269

Marks for this submission: 0/1.

5

Marks: 1

Claim sizes follow an exponential distribution with $\theta = 4.50$. Claim counts are independent of claim sizes, and have the following distribution:

n	0	1	2	3
P _n	0.43	0.29	0.21	0.07

Calculate $F_5(8)$. _____

Answer:

[Make comment or override grade](#)

Incorrect
Correct answer: 0.800836

Marks for this submission: 0/1.

6

Marks: 1

A random variable has an exponential distribution with mean 20. It is to be discretized using the method of rounding with span 70. Determine the mean of the discretized distribution. _____

Answer:

[Make comment or override grade](#)

Incorrect
Correct answer: 12.54294

Marks for this submission: 0/1.

7

Marks: 1

Prescription drug losses, S , are modeled assuming the number of claims has a geometric distribution with mean 10.00, and the amount of each prescription is 64. Calculate $E[(S-160)^+]$. _____

Answer:

[Make comment or override grade](#)

Incorrect
Correct answer: 504.883546

Marks for this submission: 0/1.

8

Marks: 1

Claim counts follow a Poisson distribution with mean 3. Claim sizes follow an exponential distribution with $\theta = 600$. This severity distribution is discretized using the method of rounding with span 50. Claim counts and claim sizes are independent. A stop-loss reinsurance contract has a deductible of 130.0. Calculate expected losses paid by the reinsurance contract. _____

Answer:

[Make comment or override grade](#)

Incorrect
Correct answer: 181.0673

Marks for this submission: 0/1.

9

Marks: 1

A company provides insurance to a concert hall for losses due to power failure. You are given:

- The number of power failures in a year has a Binomial distribution with parameters $m = 8$ and $q = 0.35$.
- The distribution of loss amount due to a single power failure is:

Loss Amount	10	20	30	40
Probability	0.28	0.28	0.28	0.16

- There is an annual deductible of 22.

Calculate the expected amount of claims paid by the insurer in one year. _____

Answer:



[Make comment or override grade](#)

Incorrect

Correct answer: 44.239649

Marks for this submission: 0/1.

10

Marks: 1

A stop-loss reinsurance pays 80% of the excess of aggregate claims above 1,090, subject to maximum payment of 440. For aggregate claims, S , you are given:

- $E[(S-1,090)_+] = 470$
- $E[(S-2,180)_+] = 235$
- The probability of an aggregate claim amount between 1,090 and 2,180 is zero.

Determine the total amount of claims the reinsurer expects to pay. _____

Answer:



[Make comment or override grade](#)

Incorrect

Correct answer: 94.862385

Marks for this submission: 0/1.

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